



**Ma'an Alkhathib
Hazleen Anuar
Noorasikin Samat
Abdullah Al Mamun**

Advances in Nanotechnology and its Applications

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA



ADVANCES IN NANOTECHNOLOGY & ITS APPLICATION

EDITORS

Ma'an Alkhathib

Hazleen Anuar

Noorasikin Samat

Abdullah Al Mamun



IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
©IIUM Press, IIUM

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without any prior written permission of the publisher.

Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Ma'an Alkhatib, Hazleen Anuar, Noorasikin & Abdullah Al Mamum: Advances in
Nanotechnology & its Application

Bibliography p.

Includes Index

ISBN

ISBN: 978-967-0225-87-6

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :

IIUM PRINTING SDN. BHD.

No. 1, Jalan Industri Batu Caves 1/3

Taman Perindustrian Batu Caves

Batu Caves Centre Point

68100 Batu Caves

Selangor Darul Ehsan

Contents

<i>Preface</i>	<i>iii</i>
CHAPTER 1	1
Application of Nanofluids as Coolants in Radiator Ahmad Faris Ismail and Rashmi Walvekar	
CHAPTER 2	14
Carbon Nanotube/Rubber Nanocomposites Faridah Yusof, Mohammad Khalid and Ahmad Faris Ismail	
CHAPTER 3	46
Fatigue and Fracture in PVC/CaCO ₃ Nanocomposites Noorasikin Samat, Indra Kemal, Robert Burford, Alan Whittle and Mark Hoffman	
CHAPTER 4	62
Tensile and Impact Properties Enhancement of Crosslinked High Density Polyethylene and Ethylene Propylene Diene Monomer Nanocomposites via Electron Beam Irradiation Nur Ayuni Jamal, Hazleen Anuar and Shamsul Bahri Abd Razak	
CHAPTER 5	82
Glass Ionomer Cements Ammar A. Mustafa and Khalid A. S. Al-Khateeb	
CHAPTER 6	98
Regeneration of Carbon Nano Tubes (CNT) in Cadmium Sorption from Water Abdullah Al Mamun, Maan Alkhathib and Rabiatuladawiyah Bt. Danial	
CHAPTER 7	114
Activation of Oil Palm Empty Fruit Bunches into Activated Carbon for Removal of Zinc: Optimization by Full Factorial Design Md. Zahangir Alam and Suleyman Aremu Muyibi	
<i>Index</i>	<i>136</i>